



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/715,576	11/17/2000	Hua-Shuang Kong	5000.89A	5716

21176 7590 09/03/2003

SUMMA & ALLAN, P.A.
11610 NORTH COMMUNITY HOUSE ROAD
SUITE 200
CHARLOTTE, NC 28277

16
EXAMINER

KACKAR, RAM N

ART UNIT

PAPER NUMBER

1763

DATE MAILED: 09/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/715,576

Applicant(s)

KONG ET AL.

Examiner

Ram N Kackar

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 22 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22, 24 and 49 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 22, 24 and 49 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 22, 24 and 49 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohmura et al (US 4848272).

Ohmura et al disclose a reactor vessel of quartz (Fig 1-1) which would make it transparent to electromagnetic radiation, having a gas supply system (10), induction coils as a source of electromagnetic radiation (13,14), being barrel type (Fig 1), thermally responsive (Col 1 lines 30-36 and Col 4 line 15-38), susceptor (5), spaced optimally to allow flow of reactive gases as well as allow them to heat each other (Fig 1), and plurality of pocket to receive substrates (Fig 1).

Since both inner and outer susceptors are of thermally responsive material and have reflective surfaces, exclusion of inner susceptor in Ohmura does not materially affect the way invention works except that it may affect the capacity of substrates to be processed and the speed at which reactor comes in to temperature equilibrium (See response to amendment).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1763

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 22, 24 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmura et al (US 4848272) in view of Hubert von der Ropp (US 4419332).

Ohmura et al disclose a reactor vessel of quartz (Fig 1-1) which would make it transparent to electromagnetic radiation, having a gas supply system (10), induction coils as a source of electromagnetic radiation (13,14) being barrel type (Fig 1), thermally responsive (Col 1 lines 30-36 and Col 4 line 15-38) susceptor (5), spaced optimally to allow flow of reactive gases as well as allow them to heat each other (Fig 1), and plurality of pocket to receive substrates (Fig 1).

Ohmura discloses two susceptors, one inner and another outer surrounding the inner one. Hubert von der Ropp discloses another epitaxial reactor where substrates (13) are supported on the inner side of a truncated cone structure (Fig).

Since, as said before, both susceptors in Ohmura are of thermally responsive material, removing one for the sake of simplicity would have been obvious.

Response to Amendment

Applicants amendment filed 07/22/2003 have been considered but the arguments are not persuasive.

Applicant argues that the transitional phrase "consisting essentially of" makes Ohmura not read on the claim. The examiner does not agree.

As indicated by the applicant, necessary criteria in this instance is, whether the presence of inner susceptor has any material effect on the basic and novel properties of the invention (MPEP 2111.03).

Examiners position in this regard is that the answer is no. The basic thrust of the invention as indicated on page 5 line 22, is the reduction of thermal gradient by heating the substrate from back by direct heating (induction heating) while heating the front by radiation from other hot surfaces. Applicant has disclosed several embodiments to practice this invention. In embodiment of Fig 7 an inner susceptor is disclosed surrounded by a cylinder of thermally responsive material. This structure works and looks close to that of Ohmura. Therefore there does not appear to be any departure from the basic or novel properties of the invention by either inclusion or exclusion of the inner susceptor.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

Art Unit: 1763

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N Kackar whose telephone number is 703 305 3996. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 703 308 1633. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0661.

RK


GREGORY MILLS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700